

## **EVALUATION OF THE FDI ATTRACTIVENESS OF THE EUROPEAN COUNTRIES USING PROMETHEE METHOD**

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### **Abstract**

Foreign direct investment (FDI) could be a significant source for performance improvements of a company because aside capital, they bring knowledge, skills, technologies, as well as contacts and customers which they had in the home country. Foreign investors are motivated by realization of long-term increasing profits through a company in which they invest. Since profit depends on revenue and costs, the motives of investors can be looked for in increasing revenue (market expansion), in reducing costs (lower cost of resources), or in the simultaneous effect on revenue and costs through increased efficiency.

This paper analyzes six Southeast European countries (SEE-6) as well as the EU-27 with the aim of assessing the attractiveness of destination. Using the PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluations) multi-criteria decision making method, authors show advantages and disadvantages of each country, creating the basis for the creation and redefinition of macroeconomic policies to address them.

**Key words:** *FDI, Multi-criteria investment decisions, PROMETHEE method, European countries*

## 1. INTRODUCTION

Empirical research indicates that FDI is a particularly important element of economic development, because it opens possibilities for accelerated growth, technical innovation and enterprise restructuring, as well as capital account relief. According to the economic theory, FDI inflows are principally driven by difference in price of factors of production and size of national market or it is known as resource-seeking and market-seeking FDI. The investors could also be motivated by both: increasing revenue and reducing costs (efficiency-seeking FDI).

This paper analyzes six South-east European countries (SEE-6) as well as the EU-27 with the aim of assessing the attractiveness of the destination. Time frame for the analysis is set through three years: 2004 as the year before the crisis, 2008 as the beginning of the crisis, and 2010 as the year of the economic recovery. By using the PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluations) multi-criteria decision making method, it shows advantages and disadvantages of each country, creating the basis for the creation and redefinition of macroeconomic policies to address them.

## 2. THEORETICAL ASPECT AND DETERMINANTS OF THE FDI

### 2.1. Theoretical aspect of the FDI

The term foreign direct investment (FDI) refers to the investment of assets in the structure, equipment or setting up of an entity located in another national economy in order to achieve long-term interests while it excludes investments in securities. Foreign investors' aim is to achieve long-term cooperation with an entrepreneur in another country, so FDI includes all transactions from the initial investment to the next consecutive transactions, and a long-term motive is considered to be present when at least 10% is invested in the share capital of the local business. (Škuflić and Botrić, 2009)

There are many theoretical papers that examine FDI's issues and motivations. (Dunning, 2001; Hymer, 1976; Vernon, 1966) Economists believe that FDI is an important element of economic development in all countries, especially in the developing ones. FDI is divided into two groups. (Julius, 1991.) Those investments that create new production assets belong to the first group, and in the theory they are known as *greenfield* investments. Investments relating to the purchase of existing facilities and enterprises and then taking them over are also known as *brownfield* investments. In the economic theory, the term *mergers/acquisitions (M&A)* investment or *takeover* investment is also used

as synonym for brownfield investments. Investments made in the transition countries during the privatization process belong to the second group.

The answer to the question of where, when, and why a foreign direct investment will happen can be found in the settings of the *OLI* theory whose conceptual founder is John H. Dunning, the creator of the eclectic paradigm about international production and factors. Dunning proposes that FDI can be explained by three categories of factors; *ownership advantages* (O) for firms to operate overseas, such as intangible assets; *locational advantages* to investment in the host rather than the donor country (L), and the benefits of *internalisation* (I). (Dunning, 2001).

FDI has a direct impact on the reduction of unemployment and increasing the investment in human capital by transferring skills and knowledge between the host and home's country capital. Foreign investment, in general, contributes to the improvement of management skills and techniques, raising the level of training and education of the labor force. Along with the use of sophisticated and efficient technologies, all this helps to increase productivity (Škuflić, 2008). The negative aspects can be reflected in the balance of payments through the excessive outflow of profits to the home country, or excessive import of inputs or finished products required for accelerating business (e.g. FDI in tourism). Experience has also shown that the developed countries are moving facilities that are harmful to the environment and exactly these negative externalities should be a barrier in receiving foreign investors, the state having a crucial role to assure it.

## **2.2. Determinants of the FDI**

In an economic sense, FDI depends on different aspects of investments: the motive for investment (market-seeking, resource-seeking and efficiency-seeking), type of investment (greenfield or brownfield), the sector of investment (manufacturing or services) and the size of multinational company or investor.

Foreign investors are very cautious when entering a national economy, the macroeconomic stability being a precondition of the arrival and generally creating an interest in investing in a country. Therefore, the macroeconomic stability is one of the important determinants of foreign direct investment. It can be traced through a series of relevant macroeconomic indicators: inflation rate, unemployment rate, GDP level per capita, external debt, as well as many other indicators, depending on the nature and goals of individual investments. Likewise, studies of FDI in emerging markets have put particular stress on determinants of economic and political risk (Lucas 1993; Jun and Singh 1996).

Within the EU context, accession for the transition economies would entail membership of the Single European Market, and hence provide EU firms with the opportunity to relocate production in areas of lower labor cost. Moreover the prospect of EU membership might be viewed by potential investors as reducing country risk; both because to meet the requirements for EU admission represents an external validation of progress in transition, and because ultimate EU membership implies guarantees in terms of macroeconomic stability, institutional and legal environment and political stability.

The *market seeking* FDI aims at penetrating the local markets of host countries and is usually connected with: market size and per capita income, market growth, access to regional and global markets, consumer preferences and structure of domestic market. Characteristics of a market are among the most important determinants of the location of foreign direct investment, as well as the relative costs of production and the availability of resources and human capital. If all those factors that influence the attractiveness of a destination are positive, then investment incentives among similar countries can play a role in the investors decision on the location of investment.

In *resource seeking* investments foreign investors come to a country if it has resources in quantity or they are cheaper and better in quality comparing to other countries. The resource-asset seeking FDI depends on prices of raw materials, lower unit labor cost of skill and unskilled labor force and the pool of skilled labor, physical infrastructure (ports, roads, power, and telecommunication), and the level of technology.

Foreign investors who are motivated solely by increasing efficiency (*efficiency seeking*) consider a different number of elements that affect the specified parameter, such as the development of infrastructure (road and rail networks), industry (electricity consumption) and development of the ICT sector (number of telephone lines and cellular subscribers), the cost of performing the export and import business, tax burden, the time required to perform the work, etc. Higher tax rates, as well as frequent and unpredictable changes in the tax system of the host country, could result in a negative decision in investing. Effects of taxes on inflows of FDI have been the subject of many empirical studies (Billington, 1999; Wheeler and Moody, 1992), however, they did not give unambiguous results. The efficiency-seeking FDI covers both previously mentioned types of the FDI.

Casson (Casson, 1990) emphasized that the theory of the FDI represents an intersection of three theories: *The theory of international capital markets*, which defines the financing and risk-sharing arrangements; *The theory of the firm*, which describes the location advantages, management and input utilization; and *The trade theory*, which explains the motives for sales in the world economy. Each theory provides different insights on the FDI flows. In accordance with the above, in this paper we use the following determinants organized in the hierarchical structure:

Macroeconomic determinants:

- Inflation
- Unemployment
- Government gross debt % of GDP
- Export % GDP

Market seeking:

- GDP per capita
- GDP growth rate
- Export growth rate
- Population

Resource seeking:

- Labour
  - Labour force
  - Total enrollment % (primary school)
- Natural resources
  - Agricultural land %
  - Forest area %
- Capital
  - Interest rate
  - Lending interest rate

Efficiency seeking:

- Infrastructure
  - Rail lines
  - Roads
  - Electric power consumption
  - Mobile phone subscriptions
- Time for doing business
  - Time to export
  - Time to import

As can be seen, assessing the attractiveness of a country for FDI is a multi-criteria decision problem. Since all the criteria are not of the same importance for investors, there are two important steps in conducting the analysis: determination of the weights associated with certain criterion and the choice

of the most appropriate multi-criteria decision method for this problem. The data for these indicators are available by the World Bank.

### 3. RESEARCH

#### 3.1. PROMETHEE multi-criteria decision method

By comparing the two countries based on the values of one criterion, one may find the difference in the values of no significance, and assess the two countries as equally attractive. This calls for the description of criteria preferences, or determination of preference functions for each criterion. Hence the PROMETHEE multi-criteria decision method, since it encompasses both the relative importance of the criteria considered, and the translation of the difference between evaluations obtained by comparison of two countries by a particular criterion into a preference degree ranging from 0 to 1. A relatively large number of criteria requires consideration of the weight determination method (Macharis et al. 2004).

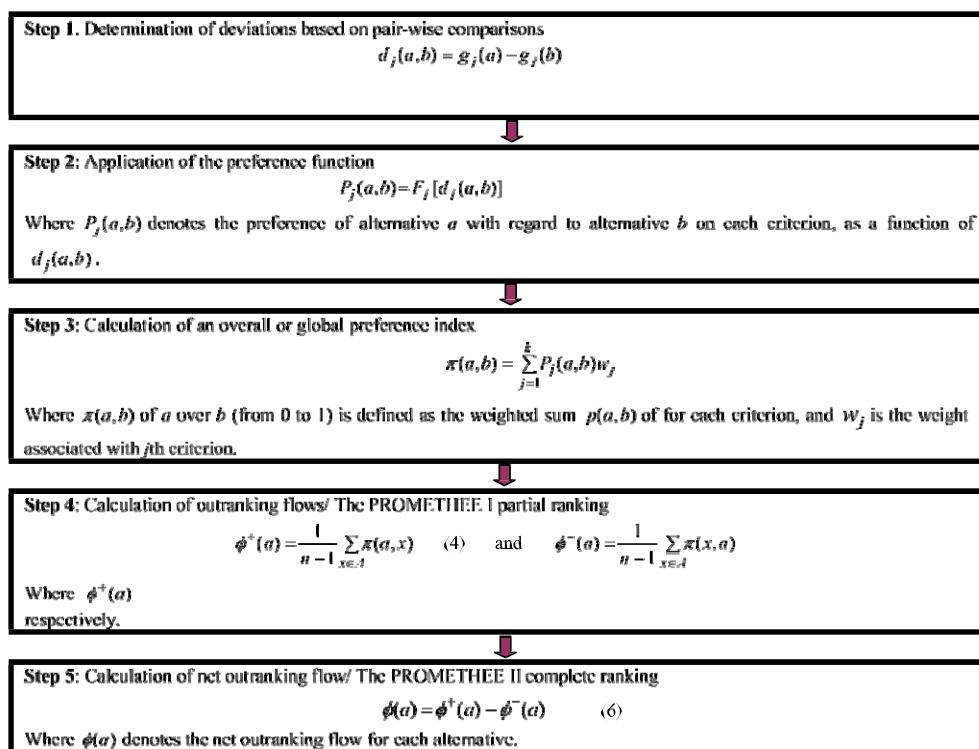


Figure 1: Stepwise procedure for PROMETHEE II. Source: Behzadian et al. (2010)

For FDI both the positive and the negative aspects of a country should be taken into account, so for the analysis we use PROMETHEE II, a complete ranking method. The stepwise procedure for PROMETHEE II is shown on Fig. 1 where the quantities computed by the method are introduced.

### 3.2. Determination of weights of relative importance of the different criteria

Since the PROMETHEE method requires the information about the weights associated with each criterion, and since there are 20 criteria, the determination of the weights was conducted with respect to the hierarchical distribution of the criteria by using the Eigenvector Method. So in order to reduce a relatively large number of comparisons, with the help of Expert Choice program we compared the criteria of the same level. The final weights were obtained by multiplying the weight of sub-criteria with weight of the “parent” criteria and they are shown in Table 1. It can be seen that the determinants regarding macroeconomic stability are considered as the most important, as well as export growth rate determinant.

Table 1: Weights for different criteria.

Preferences	Weight	Preferences	Weight
Inflation	0,13	Agricultural land	0,03
Unemployment	0,13	Forest area	0,03
Government gross debt	0,13	Interest rate	0,01
Export % GDP	0,13	Lending interest rate	0,02
GDP per capita	0,02	Rail lines	0,03
GDP growth rate	0,02	Roads	0,03
Export growth rate	0,12	Electric power consumption	0,03
Population	0,02	Mobile phone subscriptions	0,01
Labour force	0,01	Time to export	0,07
Total enrollment	0,04	Time to import	0,01

## 4. RESULTS

By using the Visual PROMETHEE program we get the PROMETHEE II complete ranking, while the overall positive and negative aspects of FDI attractiveness are shown on Figure 1 in Appendix, and the rest of the results are as follows. For all three years, Luxemburg is the most attractive country as can be seen from appendix. The reason for this lies in very high level of macroeconomic stability, where the extremely large level of export as percentage of GDP separates Luxemburg from all the other countries. While Luxemburg shows almost no attractiveness in terms of resource seeking

determinants, it is the most attractive country regarding efficiency, with good infrastructure and very short time needed for import and export. Aside from Luxemburg the most attractive countries in all three years were Sweden, Finland, Netherlands, Ireland and Austria, followed by Czech Republic that fell back in 2008, and Denmark which showed a decrease in attractiveness in 2010 due to high inflation. Most of these countries showed high attractiveness in efficiency seeking determinants.

Countries where attractiveness in some factors was followed by almost the same amount of unattractive factors were Poland, Belgium, France, Slovenia, Spain and United Kingdom. Estonia was also between second mentioned countries but in 2010 by improving macroeconomic stability and market seeking determinants moved to the group of very attractive countries.

Hungary, Italy, Greece, Romania, as well as all SEE-6 countries were evaluated as unattractive for FDI. In 2008 Slovakia was also in this group, but by great improvements in macroeconomic stability it became a very attractive country. Bulgaria also showed improvements in 2010: by improving macroeconomic stability and market seeking determinants it is now a country with the same amount of attractive and unattractive factors.

Regarding the SEE-6 countries, when put into EU context, Albania is the most attractive destination for foreign investors, mostly due to economic stability and market seeking factors. Except Serbia which had high inflation and unemployment rates, together with Bosnia and Herzegovina and Macedonia with large government gross debts, SEE-6 countries did not show significant signs of macroeconomic instability, even though the level is a bit behind the EU-27 countries. Moreover, Croatia in 2010 would have had an overall attractive macroeconomic stability if there were not for very low export as a percentage of GDP. The other important problem for overall poor position of SEE-6 countries lies in high unattractiveness in other three determinants: market, resource and efficiency seeking ones. Even though market seeking determinants are unattractive for investors, all countries except Croatia showed highly attractive GDP growth rates. Albania is the most attractive SEE-6 country probably because it showed high competitiveness with large export growth rate, which had a significant weight in assessing attractiveness. All of the SEE-6 countries are relatively small when compared to EU-27 countries so their population and labor force are not sufficient to attract investors. When compared mutually with regard to the resource determinants, all of the SEE-6 countries are more or less equally unattractive, with the exception of Serbian attractive agricultural land area. All countries also showed unattractiveness in the efficiency aspect, even though Serbia, Montenegro and Macedonia showed large improvements regarding the time-efficiency for import and export.



The comparison of these results with actual FDI per capita inflow data for year 2004, 2008 and 2010 is respectively shown on Figures 2, 3 and 4. Luxembourg is omitted from these Figures due to its high level of attractiveness accompanied by exceptionally large FDI per capita inflows. This fact also confirms the validity of our model. These figures show how the amount of the FDI in most cases follows the attractiveness of a country assessed by the PROMETHEE method, with a few exceptions. It can be seen on Figure 2 how FDI for Belgium, Ireland, Denmark, Germany (and Latvia, Lithuania and Slovakia) does not follow their assessed level of attractiveness.

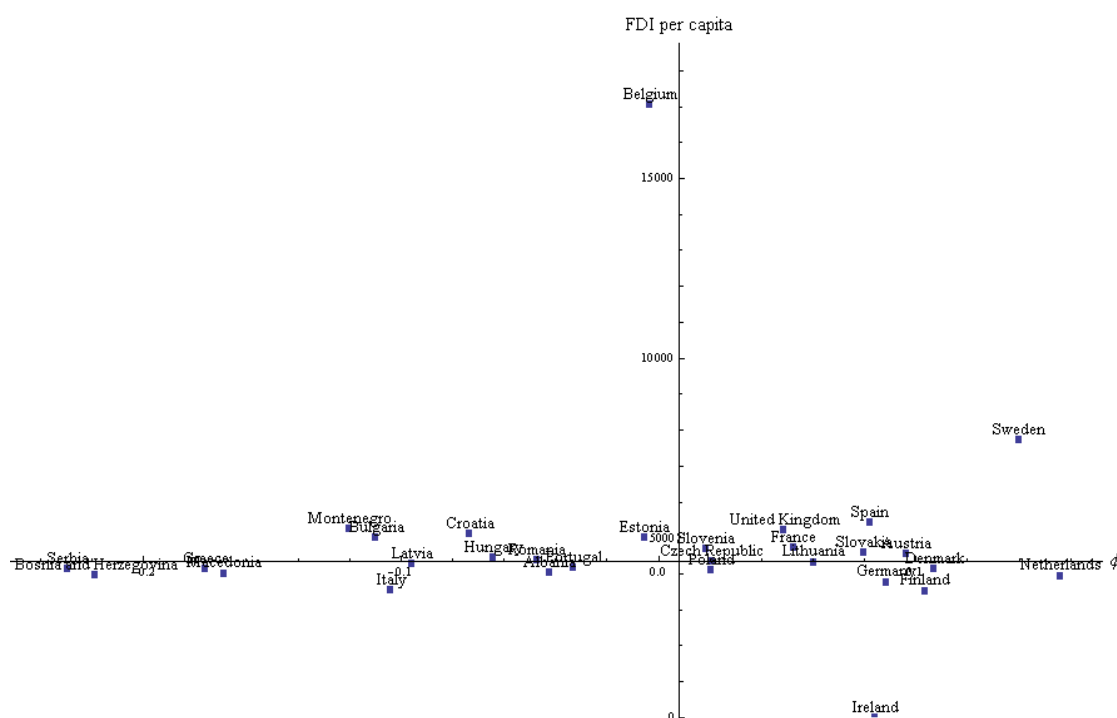


Figure 2: Country attractiveness and FDI inflows for year 2004.

On Figure 3 this is again case for Belgium and Ireland, and also for Croatia, Montenegro and Bulgaria. On Figure 4, with again Belgium and Ireland, this is the case for Montenegro, Denmark and Netherlands. Those discrepancies are the result of major privatization projects at that time (Ireland 2010, Montenegro 2008 and 2010, Croatia 2008). Furthermore, speculative capital outflows led by short term goal of high interest rates of return left the countries with first signs of crisis (Ireland 2004, 2008). By showing the correspondence between the assessed attractiveness and the amount of FDI, and taking into consideration weights assigned to the criteria, the analysis showed the importance of price stability and the stability of real economy, low level of government debt, as well as the importance of export in attracting foreign investors. The research confirmed the relevance of the chosen weights showing how foreign investors reacted to the first signs of crisis in countries such as Italy, Portugal, Spain punishing them with smaller FDI inflows.

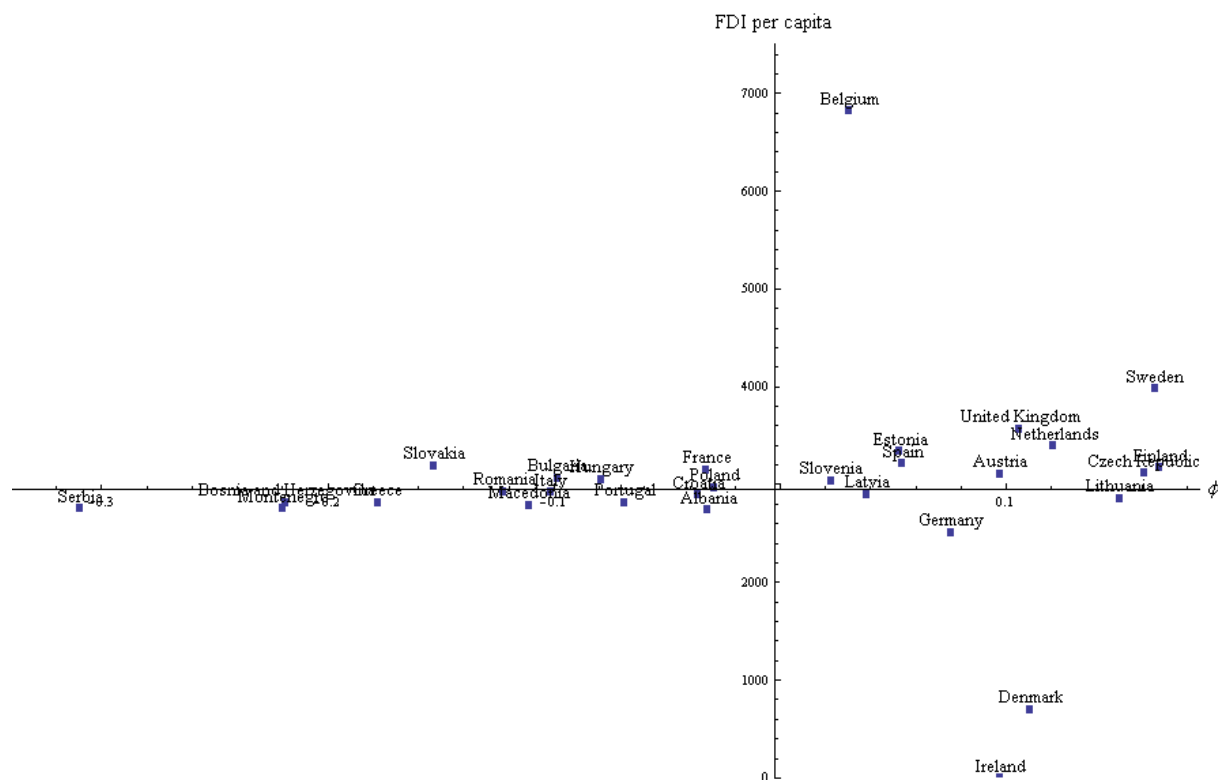


Figure 3: Country attractiveness and FDI inflows for year 2008.

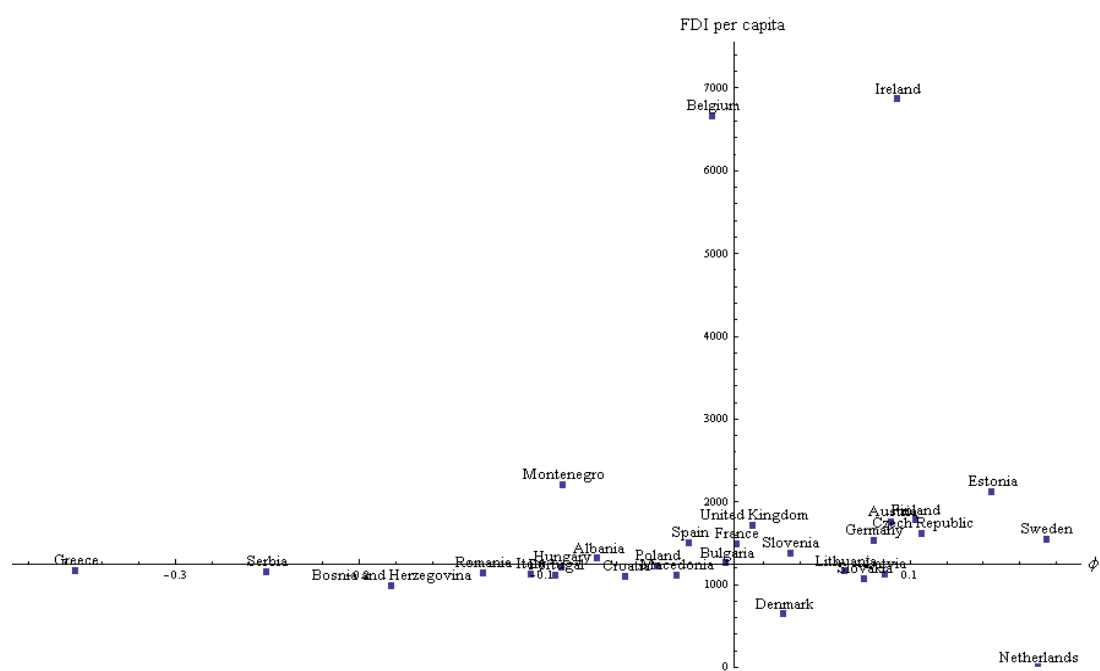


Figure 4: Country attractiveness and FDI inflows for year 2010.

## 5. CONCLUSION

The conducted analysis shows a high level of coincidence of this model in terms of the selected FDI determinants and realized FDI inflows for European countries in chosen years. Based on this we conclude that appropriate selection of weights for FDI determinants for assessing the attractiveness of the destination in the eyes of foreign investors was made. The model showed instability or more precisely deviation for countries with large capital outflows, e.g. Ireland in 2004 and 2008, and for countries with significant takeovers of attractive highly profitable government firms, primarily government monopolies or investments involving speculative capital. Also it points out that countries in transition whose aim is attracting foreign investors to bring, besides capital, technology, knowledge and new markets care about creating economic policies that take into account these elements. It is important to achieve price as well as real sector stability. This requires selective implementation of the aims of Washington consensus (privatization, macroeconomic stabilization, liberalization, deregulation), which was not the case for the analyzed SEE-6 countries, and at the same time limitation of speculative capital inflows, so it would not deepen the recession and the crisis in the moments of their creation. Except macroeconomic determinants (inflation rate, government debt, unemployment rate), other elements are more or less of equal importance, so a country depending on its comparative and competitive advantages can act on their strengthening, which transitional economies succeeded to a certain extent.

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